

TABLE 4 TO § 87.23—TIER 8 NO<sub>x</sub> STANDARDS FOR NEW SUBSONIC TURBOFAN OR TURBOJET ENGINES WITH RATED OUTPUT ABOVE 26.7 kN

If the rated pressure ratio is—	and the rated output (in kN) is—	The NO <sub>x</sub> emission standard (in g/kN rated output) is—
rPR ≤ 30 .....	26.7 < rO ≤ 89 .....	40.052 + 1.5681·rPR – 0.3615·rO – 0.0018·rPR·rO
	rO > 89 .....	7.88 + 1.4080·rPR
30 < rPR < 104.7 .....	26.7 < rO ≤ 89 .....	41.9435 + 1.505·rPR – 0.5823·rO + 0.005562·rPR·rO
	rO > 89 .....	– 9.88 + 2.0·rPR
rPR ≥ 104.7 .....	all .....	32 + 1.6·rPR

(d) This paragraph (d) specifies phase-in provisions that allow continued production of certain engines after the Tier 6 and Tier 8 standards begin to apply.

(1) Engine type certificate families certificated with characteristic levels at or below the Tier 4 NO<sub>x</sub> standards of § 87.21 (as applicable based on rated output and rated pressure ratio) and introduced before July 18, 2012 may be produced through December 31, 2012 without meeting the Tier 6 NO<sub>x</sub> standards of paragraph (c)(2) of this section. This also applies for engines that are covered by the same type certificate and are determined to be derivative engines for emissions certification purposes under the requirements of this part. Note that after this production cutoff date for the Tier 6 NO<sub>x</sub> standards, such engines may be produced only if they are covered by an exemption under § 87.50. This production cutoff does not apply to engines installed (or delivered for installation) on military aircraft.

(2) Engine type certificate families certificated with characteristic levels at or below the Tier 6 NO<sub>x</sub> standards of paragraph (c)(2) of this section with an introduction date before January 1, 2014 may continue to be produced. This also applies for engines that are covered by the same type certificate and are determined to be derivative engines for emissions certification purposes under the requirements of this part.

(3) An engine manufacturer may produce up to six newly manufactured Tier 4 engines on or after July 18, 2012, subject to the provisions of this paragraph (d)(3). Tier 4 engines meeting the criteria of this paragraph (d)(3) are exempted without request from the otherwise applicable Tier 6 NO<sub>x</sub> emission standard. To be eligible for this exception the engines must have a date of manufacture prior to August 31, 2013

and be fully compliant with all requirements applicable to Tier 4 engines. The manufacturer must include these engines in the report required by § 87.50. This exception is void for any manufacturer that produces more than six accepted engines under this paragraph.

[77 FR 36382, June 18, 2012, as amended at 77 FR 65823, Oct. 31, 2012]

### Subpart D—Exhaust Emissions (In-Use Aircraft Gas Turbine Engines)

#### § 87.30 Applicability.

The provisions of this subpart are applicable to all in-use aircraft gas turbine engines certified for operation within the United States of the classes specified beginning on the dates specified.

#### § 87.31 Standards for exhaust emissions.

(a) Exhaust emissions of smoke from each in-use aircraft gas turbine engine of Class T8, beginning February 1, 1974, shall not exceed: Smoke number of 30.

(b) Exhaust emissions of smoke from each in-use aircraft gas turbine engine of class TF and of rated output of 129 kilonewtons thrust or greater, beginning January 1, 1976, shall not exceed:  $SN=83.6(r0)^{-0.274}$  (r0 is in kilonewtons).

(c) The standards set forth in paragraphs (a) and (b) of this section refer to exhaust smoke emissions emitted during operations of the engine as specified in the applicable section of subpart H of this part, and measured and calculated in accordance with the procedures set forth in this subpart.

[47 FR 58470, Dec. 30, 1982, as amended at 48 FR 2718, Jan. 20, 1983]